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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,557	10/10/2001	W. Monty Reichert	2455.3US	7868

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EXAMINER
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RAMILLANO, LORE JANET

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/973,557

Applicant(s)

REICHERT ET AL.

Examiner

Lore Ramillano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) 26-63 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11-13, 18-20 and 23 is/are allowed.
- 6) ☒ Claim(s) 1-10, 14-17, 21, 22, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. In applicant's reply filed on 8/22/06, applicant amended claim 1.

#### **Response to Amendment**

2. The rejection of claims 1-25 under 35 U.S.C. 112, second paragraph, is withdrawn. New rejections follow.

#### **Claim Rejections - 35 USC § 112**

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7 and 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 7, does applicant mean that the diffraction grating is formed on the first planar surface of the substrate or on the surface of the waveguide film adjacent to first planar surface of the substrate (the side of the waveguide, which does not associate with the capture molecules)?

Claim 9 is indefinite because of the term, "precise." What does applicant mean by this term? What makes the spacing layer "precise"?

5. The rejections over the prior art are withdrawn. New rejections follow.

#### **Claim Rejections - 35 USC § 102**

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors

Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology

Technical Amendments Act of 2002 do not apply when the reference is a U.S.

patent resulting directly or indirectly from an international application filed before

November 29, 2000. Therefore, the prior art date of the reference is determined

under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C.

102(e)).

7. **Claims 1-5, 7, 8, 15-17, 21, 22, 24, and 25** are rejected under 35

U.S.C. 102(b) as being anticipated by Tiefenthaler et al. ("Tiefenthaler," US

5071248).

In Fig. 1, Tiefenthaler discloses a composite waveguide comprising: a substrate (2) comprising a first optical material of refractive index  $n_1$  and having a first planar surface and an opposite second surface, and a waveguide film (1) comprising a second optical material having a refractive index  $n_2$  which is greater than refractive index  $n_1$ , and is disposed on the first planar surface of the substrate (column 4, lines 4-8); capture molecules (i.e. column 5, lines 3-64), a light source (column 6, lines 59-62), and a light detection device (i.e. D1, Fig. 2).

Tiefenthaler further discloses a prism (Fig. 3, column 7, lines 63-65); a diffraction grating (i.e. Fig. 3, column 7, lines 63-65); a waveguide coupler (i.e.

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Fig. 3, column 7, lines 63-65); a first optical material comprising silicon dioxide and quartz (glass substrate, column 3, lines 62-64); and a second optical material comprising silicon dioxide (column 3, lines 65-68).

8. **Claims 1-10, 14, 15, 17, 21, 22, 24, and 25** are rejected under 35 U.S.C. 102(b) as being anticipated by Flanagan et al. ("Flanagan," US 5081012).

In Fig. 10, Flanagan discloses a composite waveguide comprising: a substrate (95) comprising a first optical material of refractive index  $n_1$  and having a first planar surface and an opposite second surface, and a waveguide film (94) comprising a second optical material having a refractive index  $n_2$  which is greater than refractive index  $n_1$ , and is disposed on the first planar surface of the substrate; capture molecules, a light source (laser, 91), and a light detection device (98) (column 6, line 60-column 8, line 39).

Flanagan further discloses a prism (Fig. 10, column 8, lines 6-19); a diffraction grating (Figs. 9a, 9b, column 7, lines 3-15); a waveguide coupler (Fig. 10, column 8, lines 6-19); an input waveguide (20) and a spacing layer (26) (column 5, lines 27-32); waveguide has a thickness of at least about 0.1  $\mu\text{m}$  (column 2, lines 1-6); and a first optical material comprising silicon dioxide and quartz (glass substrate, column 6, lines 63-66).

9. **Claims 1-4, 8, 14, 15, 21, 22, 24, and 25** are rejected under 35 U.S.C. 102(e) as being anticipated by Attridge ("Attridge '784," US 5344784).

Attridge discloses a composite waveguide comprising: a substrate (4, Fig. 1) comprising a first optical material of refractive index  $n_1$  and having a first planar surface and an opposite second surface, and a waveguide film (5, Fig. 1)

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comprising a second optical material having a refractive index  $n_2$  which is greater than refractive index  $n_1$ , and is disposed on the first planar surface of the substrate (column 1, lines 27-45); capture molecules (column 4, lines 63-column 5, line 20), a light source, and a light detection device (column 5, lines 27-40).

Attridge further discloses an optical coupling element (i.e. prism or a grating coupler, column 5, lines 27-40); a waveguide film having a thickness of at least about 0.1  $\mu\text{m}$  (i.e. column 4, lines 25-42); and a first optical material comprising silicon dioxide or magnesium fluoride (i.e. column 2, lines 1-12).

### **Response to Arguments**

10. Applicant's arguments, see p. 12-18, filed 8/22/06, with respect to the rejection(s) of claim(s) 1-25 under Attridge '095, Attridge '784, and Herron have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new ground(s) of rejections are made in view of Attridge, Flanagan, and Tiefenthaler.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lore Ramillano whose telephone number is (571) 272-7420. The examiner can normally be reached on Mon. to Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information

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for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lore Ramillano  
Examiner  
Art Unit 1743

10/24/06

  
Jill Warden  
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